

CLAIMS

What is claimed is:

1. An inductive device, comprising:
 - a core coupled to a substrate; and
- 5 a conductive coil surrounding the core, the coil comprising segments formed from a first plurality of bond wires and a second plurality of bond wires, the first plurality of bond wires extending between the core and the substrate, each of the first plurality of bond wires coupled to two of a plurality of wire bond pads, and the second plurality of bond wires extending over the core and coupled between two of the plurality of wire bond pads.
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2. The inductive device of claim 1, wherein the core includes a magnetic material selected from a group consisting of a ferrite material and a ferromagnetic material.
3. The inductive device of claim 1, wherein the core is cylindrical in shape.
4. The inductive device of claim 1, wherein the core is toroidal in shape.
- 15 5. The inductive device of claim 1, wherein the substrate is made of a silicon material.
6. The inductive device of claim 1 wherein the substrate is made of a semiconductor material.
7. The inductive device of claim 1 wherein the substrate is characterized as a lead frame.
8. The inductive device of claim 1, wherein the core is coupled to the substrate using
- 20 epoxy, the first plurality of bond wires extending through the epoxy.
9. The inductive device of claim 1, further comprising a standoff for supporting the core a predetermined distance above a surface.

10. The inductive device of claim 1, wherein the first and second plurality of bond wires includes a conductive material selected from a group consisting of gold, copper, and aluminum.

11. The inductive device of claim 1, further comprises a metal shield positioned between 5 at least a portion of the inductive device and the substrate.

12. The inductive device of claim 11, wherein the substrate is part of an integrated circuit die, and wherein the metal shield and the plurality of wire bond pads are formed from a top metal layer of the integrated circuit die.

13. The inductive device of claim 12, wherein the top metal layer is formed from at least 10 a metal selected from a group consisting of aluminum and copper.

14. The inductive device of claim 1, wherein the inductive device is characterized as a transformer.

15. The inductive device of claim 1, wherein the inductive device is characterized as an inductor.

15 16. The inductive device of claim 1, wherein the substrate is part of a integrated circuit die, the core being located over the die.

17. The inductive device of claim 16 wherein the first plurality of bond wires are insulated and the second plurality of bond wires are insulated.

18. A method for forming an inductive device, comprising:
20 attaching a first plurality of bond wires between first pairs of a plurality of wire bond pads;
positioning a core over the first plurality of bond wires; and
attaching a second plurality of bond wires between second pairs of the plurality of wire bond pads, the second plurality of bond wires extending over the core.

19. The method of claim 18, wherein the plurality of wire bond pads is coupled to a substrate, wherein the substrate is made of a silicon material.
20. The method of claim 18, wherein the plurality of wire bond pads is coupled to a substrate, wherein the substrate is made of a semiconductor material.
- 5 21. The method of claim 18, wherein the plurality of wire bond pads is coupled to a substrate, wherein a metal shield is positioned between the core and the substrate.
22. The method of claim 21, wherein the metal shield and the plurality of wire bond pads include aluminum.
- 10 23. The method of claim 18, wherein the core includes a magnetic material selected from a group consisting of a ferrite material and a ferromagnetic material.
24. The method of claim 18, further comprising coupling the core to a substrate using epoxy, the first plurality of bond wires extending through the epoxy.
25. The method of claim 18, further comprising providing a standoff for supporting the core a predetermined distance above a surface.
- 15 26. The method of claim 18, wherein the first and second plurality of bond wires includes a conductive material selected from a group consisting of gold, copper, and aluminum.
27. The method of claim 18, wherein the substrate is part of an integrated circuit die, the core being positioned over the die.
28. The method of claim 18 wherein the first plurality of bond wires are insulated and the 20 second plurality of bond wires are insulated.